

**The Tennessee Regulatory Authority's Report to the General Assembly  
on the Status of Telecommunications Needs of Tennessee's Deaf, Blind  
and Speech Impaired Community**

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## Preface

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*For Americans without disabilities, technology makes things easier. For Americans with disabilities, technology makes things possible. (Radabaugh, 1988)*

The One-Hundredth Tennessee General Assembly passed a joint resolution directing the Tennessee Regulatory Authority (“TRA”) to study the cost and availability of telephone service equipment for the deaf, blind and speech impaired in Tennessee.<sup>1</sup> Additionally, the Resolution requested that the TRA make recommendations to the General Assembly on ways to make such equipment more readily available to those citizens who would most benefit from the equipment. The TRA is to report its findings by the opening day of the 101st General Assembly.

This Report consists of four (4) chapters. The first chapter addresses the need for such equipment and attempts to estimate the number of disabled Tennesseans needing some form of assistive communications devices in order to use the telephone network. This chapter also discusses what is currently being done to assist Tennessee’s hearing, speech and visually impaired population to be able to use the telephone network. The second chapter deals with the accessibility and cost of the telephone equipment needed by this disabled population. The third chapter reviews past state actions to assist the disabled to receive an assistive communication device. This chapter also reviews what other states are doing to address this need. The final chapter outlines some options that the General Assembly may want to consider in order to meet the need for assistive communications devices in Tennessee.

## ***CHAPTER 1***

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### **Telephone Service for All: An Analysis of Tennessee's Disabled Community**

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#### **Introduction**

During the summer, around 4:00 AM, Susan, who is deaf, was awakened by her husband, who is hearing, while they slept. Her husband was grabbing his chest and trying to tell his wife to call for help. He could not talk, so she called 911 and tried to mouth her words for help, but the 911 operator could not understand her and said she sounded like a child. Susan made three (3) attempts to call for help and was continually hung up on. Susan did not have an assistive communication device, sometimes referred to as a TTY (text telephone) or a TDD (telephone device for the deaf), that would allow her to use the telephone.

Since Susan and her husband lived in a rural area, the nearest neighbor was half a mile down the road, and Susan could not drive. Frantically, Susan ran as fast as she could to get help for her husband. When the ambulance finally arrived it was too late. They told Susan that 45 minutes had gone by and her husband had been dead for about 25 to 30 minutes from a massive heart attack. Having access to an assistive communication device may have made the difference in this emergency.

In another major city, there was a similar tragic occurrence. Jimmy, who is deaf, was attending college and did not have an assistive communication device in his dorm room. He depended upon his roommate, who was hearing, to relay telephone calls for him. One day when his roommate was out, Jimmy received a telephone call from his

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<sup>1</sup> House Joint Resolution 922.

mother, who is also deaf. The phone in Jimmy's room is equipped with a flashing light to let Jimmy know that it is ringing. So, when his roommate was in the shower or visiting another room, Jimmy can go and get his roommate to answer the phone and relay the call. Jimmy saw the flashing light, signaling that the phone was ringing. But, Jimmy could not receive the call because his roommate was away for a couple of hours. Jimmy answered the phone and wanted so bad to hear the caller but could not. The caller was Jimmy's mother who attempted unsuccessfully five times to contact her son. Jimmy could not afford to take an assistive communication device to college because of his family's financial circumstances. Jimmy's mother was a single parent living on a fixed income and could not afford the high cost of an additional TTY for her son to take to college.

The reason his mother was trying to call him through a relay center was to tell him to hurry home because his little sister had been hit by a car and was in critical condition. She was asking to see her big brother. Jimmy's mom finally discovered that she could call the police in the town where the college was located and ask for their help in contacting her son. Unfortunately, by the time Jimmy arrived home, his sister had gone into a deep coma and died a few hours later. Jimmy did not have the opportunity to say good-bye to his sister.

Such horrific occurrences are not uncommon to the hearing impaired, speech impaired and blind community in Tennessee. It is difficult to imagine how one might function or even survive in society without immediate access to a telephone. Telephone access is more than a vital tool for users to conduct business and socialize. It is a necessity that can sometimes make the difference between life and death. The hearing, speech impaired and blind community face obstacles in using the telephone that the

general population do not have to encounter. One major obstacle is the affordability and availability of TTY equipment. The hearing impaired, speech impaired and blind community is required to use special equipment, referred to as TTY for the hearing impaired and TB (Telebraille) for the blind, to make and receive routine telephone calls.

The purpose of this section is to evaluate the need for telephone assistive devices for the deaf, hard of hearing, speech impaired, blind and visually impaired citizens of Tennessee. Additionally, this section will provide a review of national and state demographics regarding the deaf, hard of hearing, speech impaired, blind and visually impaired communities in an effort to estimate Tennessee's disabled population. Finally, this section will discuss current efforts underway in Tennessee to improve the telecommunication system for the hearing impaired, speech impaired and blind community.

### **National Estimates of the Blind or Visually Impaired Populations in the U.S.**

Two recurring federal surveys provide national estimates of the visually impaired community. One of these surveys is the annual Health Interview Survey ("HIS") of the National Center for Health Statistics ("NCHS"), a division of the Centers for Disease Control and Prevention. In 1994, HIS's household-based sample estimated 8,601,000 U.S. citizens with "trouble seeing even with eyeglasses." An analysis of HIS data collected from 1989 to 1994 shows that an estimated 500,000 U.S. citizens report that they are "blind in both eyes."

An alternative estimate of the visually impaired community comes from a federal survey of households conducted by the Bureau of the Census Survey of Income and Program Participation ("SIPP"). In 1991-92, SIPP's broad measure yielded an estimate of

nearly 10 million U.S. citizens who reported "difficulty seeing the words and letters in ordinary newspaper print, even when wearing eyeglasses or contact lenses." From that group, a subgroup of 1.6 million people reported that they were "not able to see words and letters at all."<sup>2</sup>

In addition to this household-based sample, people in long-term care institutions, mainly nursing homes, include many who have severe visual impairment. In 1985, NCHS conducted its National Nursing Home Survey ("NNHS") in an effort to assess the number of institutionalized patients who are either blind or severe visually impaired. This survey found that approximately 338,200 institutionalized persons are either blind or have "partial or severe visual impairment."

To summarize, an estimate of between 8.9 million and 10.3 million U.S. citizens have been identified as having some form of severe visual disability. This number can be expected to grow as the life expectancy of the citizenry increases.<sup>3</sup>

We could find no Tennessee specific studies that identify the visually impaired and blind population in Tennessee. Extrapolating from the above national estimates, however, could provide an estimate of between 90,000 to 100,000 Tennesseans with some kind of severe visual impairment.<sup>4</sup>

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<sup>2</sup> National Council on Disability, "Access to Multimedia Technology by People with Sensory Disabilities," Washington, DC., 1998.

<sup>3</sup> Ibid.

<sup>4</sup> This estimated range is arrived by using the same percentage of Tennessee's population to the National population. For example, Tennessee makes up approximately 2 percent of the U.S. population. We used the 2 percent factor to estimate Tennessee's visually impaired and blind community. These estimates are for descriptive purposes only and are not intended to accurately portray the number of severely visual impaired citizens in Tennessee.

### **National Estimates of the Deaf or Hard of Hearing Populations in the U.S.**

The National Institute on Deafness and Other Communicative Disorders (“NIDCD”) has indicated that there are at least 28 million deaf, late-deafened, and hard-of-hearing people in the United States. The League for the Hard of Hearing in New York City confirmed the accuracy of this NIDCD statistic in July 1996. The Council of Organizational Representatives has also adopted this statistic as an accurate indication of the total population of deaf and hard-of-hearing individuals in this country.<sup>5</sup>

The deaf and hard-of-hearing population is also estimated by NCHS. According to its 1990 and 1991 HIS, approximately 20 million persons, or 8.6 percent of the total U.S. population who were three years of age and older, were reported to have some form of hearing impairment. Additionally, persons 65 years and older were eight times more likely to have hearing impairment (29 percent) compared to persons in the age category of 18 through 34 (3.4 percent).<sup>6</sup>

### **National Estimates of the Speech Impaired Population in the U.S.**

The United Cerebral Palsy Association (“UCPA”) indicates that there are approximately 2.5 million people in the United States with some type of functional speech disability. UCPA also notes that there are more than 500,000 people in the United States with Cerebral Palsy. Of this number, 30 percent have severe speech disabilities, while 85-90 percent have speech disabilities. UCPA also estimates that at least 150,000 people

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<sup>5</sup> ”Access to Multimedia Technology by People with Sensory Disabilities,” 1998.

<sup>6</sup> Ibid.

with cerebral palsy need augmentative communication prostheses to have their voices understood at all.<sup>7</sup>

### **State Estimates of the Disability Population In Tennessee**

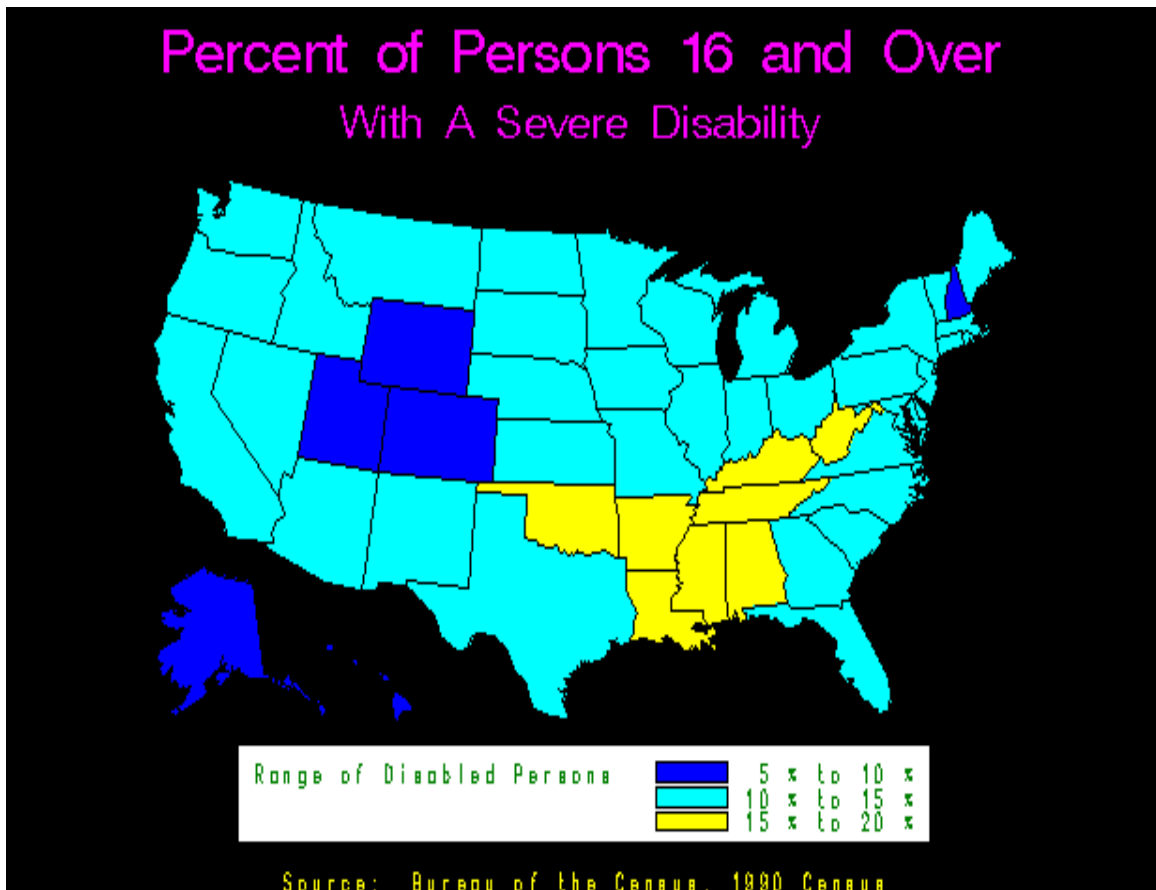
The U.S. Census Bureau provides a limited amount of demographic data regarding the disabled population on a state level, but none regarding the disabled population requiring an assistive communication device.

Below are a series of graphs produced by the U.S. Census Bureau depicting Tennessee's ranking with regard to national disability statistics. The following series of graphs illustrate the "big picture" in respect to Tennessee's total disabled population, but are not intended to estimate the portion of Tennessee's population that require the use of an assistive communication device to use a telephone.

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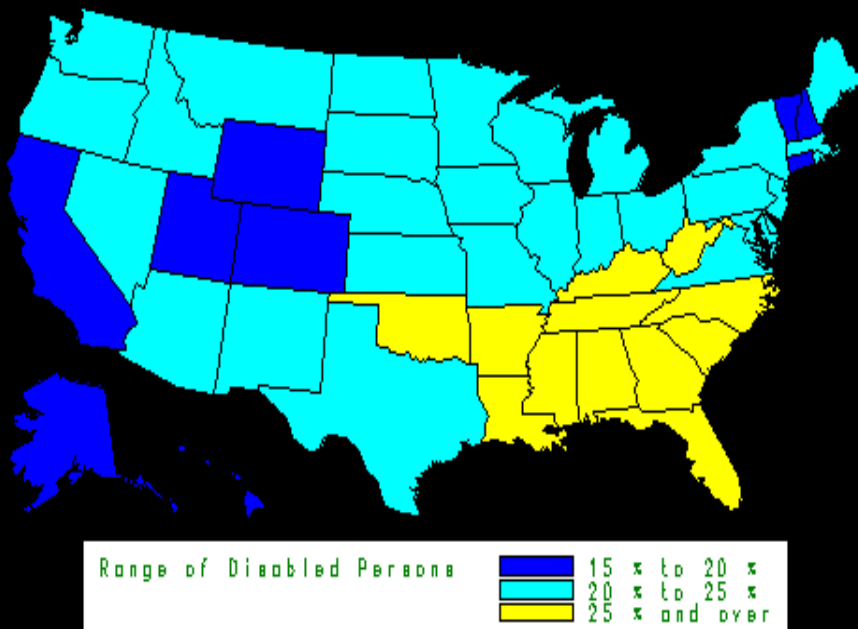
<sup>7</sup> Federal Communications Commission, "Telecommunications Relay Services and Speech-to Speech Services for Individuals with Hearing and Speech Disabilities," Washington, DC., 1998.



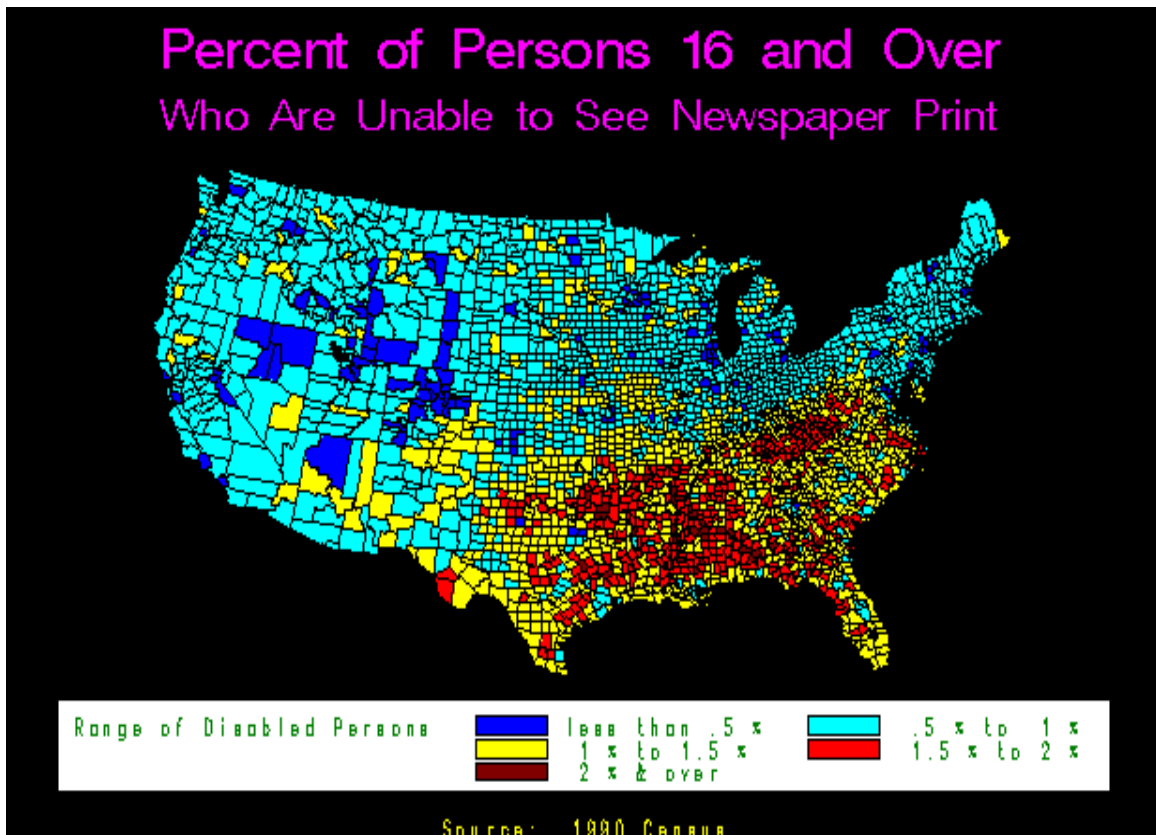


The above graph depicts by state the percentage of persons 16 and over with a severe disability. Tennessee ranks in the highest percentage category with a population range of 15 to 20 percent with some form of severe disability. It is reasonable to speculate that a large number of these citizens require the use of an assistive communication device to use the telephone network.

## Percent of Persons 16 and Over With Any Disability



The above graph illustrates the percentage of persons 16 years and older with any disability by state. Tennessee again ranks in the highest percentage (25 percent and over) category.



The above graph depicts the percentage of persons 16 years and older who are unable to see newspaper print. Once more Tennessee ranks high in having a relatively large percentage of its population who cannot see newspaper print.

In order to more specifically estimate Tennessee's deaf, hard of hearing, speech impaired, blind and visually impaired community, one must review statistics from the Social Security Administration's Supplemental Security Income ("SSI") program and various state and local agencies along with research conducted by Gallaudet University.

Using statistics from the National Center for Health Statistics of the U.S. Department of Health and Human Services for 1990 -1991, Gallaudet estimates the U.S. hearing impaired national population at 20 million, which is 8.6 percent of the total

national population.<sup>8</sup> This same study analyzed this population by age category and determined that the largest percentage (44.5 percent) of hearing impaired citizens were 55 years of age and older. This indicates that as the U.S. average age increases, it is likely that there will be a greater need for assistive communication devices. Gallaudet University, a nationally renowned institution with a mission to serve the educational needs of the hearing impaired, conducts its survey annually.

The Library Services for the Tennessee Hearing Impaired (“LSTHI”) has calculated Tennessee’s hearing impaired population at 8.8 percent of our state’s total population. This estimate is based upon a similar percentage of the total population as used by Gallaudet to estimate the national hearing impaired population. LSTHI has further disaggregated the estimate to approximate the number of hearing impaired citizens by Tennessee county. By the above estimates, it is apparent that Tennessee has a sizable hearing impaired population.

The State Department of Education, Division of Special Education, maintains the number of disabled students for ages 3 through 21 by disability type that have attended Tennessee public schools. As of June 1998, 182,825 disabled persons attended Tennessee schools. This number represents 3.4 percent of Tennessee’s Population of 5.4 million.<sup>9</sup> Of the number of disabled students, 27,036 are speech impaired, 404 are deaf, 1,352 are hard of hearing, 290 are blind, 736 are visually impaired and 12 are deaf-blind. It is highly probable that most of these children require either TTY or TB equipment in order to complete or receive telephone calls.

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<sup>8</sup> Holt, Judith A. and Hotto, Sue A., “Demographic Aspects of Hearing Impairment: Questions and Answers, Third Edition.” Gallaudet University, Washington, DC, 1994.

<sup>9</sup> US Department of Commerce, Bureau of the Census data for 1990, Washington, DC.

It is important to obtain an estimate of the number of infants up to 3 years old that have a visual or hearing disability in order to evaluate the future need of TTY /TB equipment in our state. The only known estimate of this category of the population is from the Tennessee Outreach Project for Children and Youth Experiencing Dual Sensory Impairments (“TREDS”), a federally funded agency at Vanderbilt University that addresses the needs of children and adults that have dual disabilities. Statistics published by TREDS indicate that 38 recipients, or 16 percent, of the 237 deaf-blind students receiving assistance from their organization were children 0-3 years of age.<sup>10</sup>

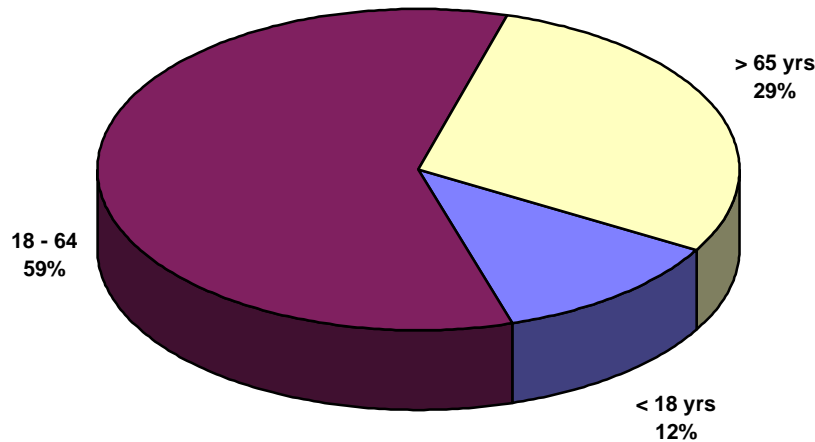
Another method of estimating Tennessee’s hearing impaired community is by reviewing SSI state data. SSI is a means tested federal assistance income supplemental program that provides monthly payments to low-income aged, blind, and overall disabled persons. In Tennessee, 171,828 persons received SSI payments in December 1997. Of this number, 28,771 represented the “low-income aged” category while 143,057 represented the blind and disabled recipients. The graph below reveals that 29 percent of SSI recipients were 65 or older, 59 percent were between the age of 18 and 64, and 12 percent were under the age of 18.<sup>11</sup>

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<sup>10</sup> Tennessee Outreach Project for Children and Youth Experiencing Dual Sensory Impairments (“TREDS”), Vanderbilt University. Nashville, TN., March 1998.

<sup>11</sup> Social Security Administration, “State Statistics for 1997,” Washington, DC

### Age Categories of SSI Recipients in Tennessee



### Earnings, Employment and Education of Tennessee's Disabled

Because TTY/TB equipment is so expensive, it is useful to review economic demographics and opportunities for Tennessee's disabled community. Without the financial assistance, it is unlikely that low-income families with particular disabilities will be able to purchase TTY/TB equipment. Unfortunately, comprehensive data regarding this subset of our population is also limited. The Social Security Administration's Office of the Research, Evaluation and Statistics ("ORES") provides ongoing statistical data and research analyses of old-aged, survivors, and disability insurance ("OASDI"). OASDI's Beneficiaries by State and County Report provides data on the number of persons receiving Social Security benefits and the particular type of disability. In addition, information is listed by number of men and women aged 65 or older and provides detailed information on the beneficiary population at the local level. Listed below are some facts regarding citizens with disabilities and economic status.

- In December 1997, 947,558 Tennesseans received disability benefits.<sup>12</sup> This represents 18 percent of the state's population.<sup>13</sup>
- 60.5 percent of Tennessee's population between the ages of 25 and 64 who are unable to work (disabled) did not obtain a high school education; compared to 36.4 percent of Tennesseans who obtained a high school education and 3.1 percent obtained a college education.<sup>14</sup>
- The chances of a person developing a disability increases with age.<sup>15</sup> As the average age of our population increases it is likely that the percentage of our population needing assistive communication devices will increase.
- 29 percent of all employed persons are disabled.<sup>16</sup>
- Disabled persons earn less than persons without a disability.
- National estimates of the percentage of citizens with some form of severe disability per age category is as follows: 1.1 percent for ages 0 to 14, 8.7 percent for persons 15 to 64 years old and 33.4 percent for citizens 65 and older.<sup>17</sup>
- In 1997, 1 in 5 adults with disabilities did not graduate from high school. Disabled adults make up a larger percentage of persons without a high school diploma compared to the non-disabled population.<sup>18</sup>
- One third of people with disabilities live in households with a total annual income of \$15,000 dollars or less.<sup>19</sup>
- People with disabilities tend to be poorer than people without disabilities. In January 1995, 30 percent of people with work disabilities had incomes below the poverty level, compared with 10.2 percent of the working-age population without work disabilities.

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<sup>12</sup> Social Security Administration, Office of Research, Evaluation and Statistics, [www.ssa.gov](http://www.ssa.gov) (Table 4), 1997.

<sup>13</sup> Tennessee Department of Economic and Community Development estimated Tennessee's 1997 population to be 5,368,198.

<sup>14</sup> US Department of Commerce, Bureau of the Census data on disability 1990, Table 1: State totals. ([www.census.gov](http://www.census.gov))

<sup>15</sup> U S Department of Commerce, Economics and Statistics Administration, "Statistical Brief," 1994.

<sup>16</sup> FCC Chairman Kennard Recognizes National Disability Awareness Month 1998. Washington, DC.

<sup>17</sup> Ibid.

<sup>18</sup> FCC Chairman Kennard, National Disability Awareness Month, Washington, DC., 1998.

<sup>19</sup> Ibid.

Of those with severe work disabilities, 35.8 percent had incomes below the poverty level.<sup>20</sup>

- People with disabilities are twice as likely to be unemployed as people without disabilities. In 1995, 11.4 million U.S. citizens had a severe work limitation that prohibited them from participating in the labor force, which was a cost to society of about \$150 billion. People with disabilities who are minorities are less likely to be employed than people with disabilities who are not minorities.<sup>21</sup>

### **Meeting the Telecommunications Needs of Tennessee's Disabled Population**

Meeting the communications needs of Tennessee's disabled population is a three-fold task. First, assistive devices, like a TTY or TB, must be provided. Without these devices, communications over the telephone network for the blind, speech and hearing impaired community is extremely difficult, if not impossible. As the succeeding chapter will show, this equipment is costly and often difficult to obtain. The second requirement is the establishment of a state relay center. The third requirement is affordable monthly telephone rates. The following discussion reviews how Tennessee is meeting these needs.

#### ***Tennessee Relay Center***

The Americans With Disabilities Act ("ADA") of 1990 was established to eliminate discrimination against the disabled and reduce barriers of access to public facilities. Title IV of the ADA specifically deals with telecommunications services by requiring the establishment of a national telecommunications relay service network. Telecommunications Relay Service ("TRS") enables people with TTYs and TBs to communicate with other people who have similar disabilities or hearing citizens and businesses. The Tennessee Relay Center ("TRC"), which provides relay services in

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<sup>20</sup> LaPlante, M.P., "Disability Statistics Report I." National Institute on Disability and Rehabilitation Research Institute, 1995.



Tennessee, was established in September 1990, several years before being mandated by the federal government. The TRC was recently recertified by the federal government as meeting or exceeding all federal requirements for such centers.

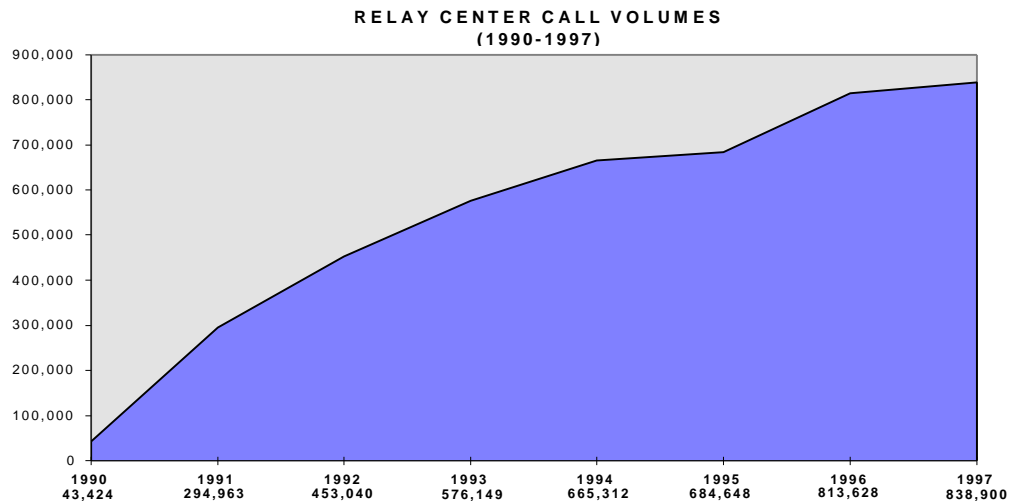
AT&T provides relay services in Tennessee under contract awarded by the Tennessee Regulatory Authority. Recently, AT&T was awarded an additional three (3) year contract after winning a competitive bid. The term of the current relay contract with AT&T is until 2001.

How do relay calls work? Calls are initiated by dialing one of the relay center's toll free numbers. One number is available for TTY/TB generated calls while another is available for voice generated calls. A specially trained relay representative called a Communications Assistant ("CA") receives the request to make a call and then dials the number of another party. The CA types the conversation into a TTY device and transmits it to the other person. In this sense, the CA actually relays the call between the two (2) individuals. For the speaking individual, slower speaking is required to allow the CA to type the message on a TTY/TB and relay it to the called party.

Since the TRC's inception in September 1990, the usage as measured by call volumes has risen dramatically. One unique aspect of Tennessee's relay center is its location. While many states are served by out-of-state relay centers, Tennessee's center is located within our state in Brentwood. Depicted below is the history of usage growth of the TRC. As depicted below the TRC processed 838,900 relay calls during 1997.

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<sup>21</sup> LaPlante, M.P., The Demographics of Disability in the Americans with Disabilities Act: From Policy to Practice. Milbank Memorial Fund: New York, NY, 1996.



Some facts concerning the TRC are listed below.

- In 1990, the TRC handled 43,424 intrastate and interstate calls compared to 838,900 intrastate and interstate calls in 1997.
- Tennessee was the fifth state to provide intrastate relay service
- As a result of a competitive bidding process, the TRA awarded a 3 year contract to AT&T to handle the center's operations.
- The recently awarded Relay contract included implementation of Turbo Code, a state-of-the-art feature that is expected to make a relay call faster and could save money. Turbo Code will also allow a conversation between the parties to occur at a more natural pace by allowing either party to interrupt during a conversation. Before, each party had to wait until the other party finished typing before speaking.
- In 1998, the Federal Communications Commission certified the TRC for 5 years as meeting or exceeding all federal requirements for relay centers.

### ***Tennessee Lifeline and Link-up Programs***

Affordable telephone service is an important element in meeting the needs of Tennessee's disabled population. While Tennessee's residential telephone rates are among the lowest of any state served by BellSouth, there is still a need for a reduced telephone

rate plan for individuals who cannot afford the basic rate. The TRA requires telephone companies to provide such a reduced telephone rate plan, which is called Lifeline Assistance Program (“Lifeline”). Lifeline is not exclusively designed for Tennessee’s disabled population and is available to all Tennesseans who meet the income criteria. This program permits consumers who qualify to enroll in a program that will reduce their monthly telephone bill.<sup>22</sup> All telephone companies regulated by the TRA offer this service.

The Link-up Assistance Program (“Link-up”) provides for reduced installation charges for telephone service. Link-up is also means tested and can result in a reduction of up to \$30 off the cost of installing a telephone.

As described in Chapter 3, Tennessee has no assistive communications device distribution program in place today. Tennesseans needing these devices must either obtain the money to purchase the equipment on their own or turn to some private charitable organization for assistance.

## **Conclusion**

It is difficult to assess the actual number of disabled Tennesseans that need an assistive communication device in order to use the telephone network. The best count available is an estimate using data collected from various institutions. One fact that is known is how Tennessee ranks, when compared to other states, on the percentage of its population with some form of severe disability. According to data provided by the 1990 Census, the percentage of Tennessee’s population with a severe disability ranks in the highest category among states. While this percentage does not specifically identify the

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<sup>22</sup> Lifeline and Link-up are means tested and are available to Tennesseans that receive some form of state economic assistance or earn less than 120 percent of the national poverty level.

percentage of population that may need assistive communication devices, it does provide evidence that our state has a large number of severely disabled citizens. It is reasonable to hypothesize that Tennessee also has a large percentage of its population that requires the use of either a TTY or TB to use the telephone network.

This chapter has identified many studies which estimate the disabled population in both the U.S and Tennessee specifically. Below is a table which summarizes the data.

[TABLE HERE]

Through research we have also discovered that the disabled are more likely to have less education, earn less income and experience greater unemployment than non-disabled citizens. This socio-economic finding requires the disabled to allocate a larger portion of their income for basic telephone service than the rest of the population. This finding is extremely important when considering the average cost of assistive communication devices, which is explored in the succeeding chapter. This chapter concludes that it is likely that Tennessee has a large number of citizens that require the use of either TTY or TB equipment in order to utilize the telephone network.

The telecommunications needs of the disabled require three (3) basic elements: the existence of a relay center, affordable basic telephone rates and access to affordable assistive communication devices. The first two elements appear to be in place in Tennessee. It is the latter element that is unknown.

## **CHAPTER 2**

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### **The Availability and Accessibility of Assistive Telecommunications Devices**

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#### **Introduction**

The Telecommunications Act of 1996 established a standard of Universal Telephone Service to ensure that “Consumers in all regions of the Nation . . . have access to telecommunications and information services...”<sup>23</sup> It also established that telecommunications services are essential to the public for education, health and safety. This mirrors T.C.A. § 65-5-207 which also affirms that Universal Service “must be maintained.” Tennessee is ensuring its citizens have this access. Tennesseans who are deaf, deaf-blind or hearing/vision impaired, however, have specific equipment needs in order to have the same access to the telephone network. So the questions arise: is the equipment necessary for those disabled Tennesseans to access telecommunications services available, and is it accessible?

This section provides a description of the specific equipment necessary to make telephone conversations possible for deaf, deaf-blind or hearing/vision impaired persons, the availability of that equipment and the range of the associated equipment costs. This section also examines the current posture of telecommunications services for deaf, deaf-blind and hearing/vision impaired Tennesseans.

The first part of this section will identify the appropriate equipment needs of each disability and provide a brief discussion on the use of each major equipment item. The second part of this section will explain the necessity of assistive communication devices to

Tennesseans and the current availability of these devices as well as their maintenance or repair. Research has provided the cost range for each major item of equipment which will also be provided in this part. The third part to this section will explore Tennessee's current status and positive actions taken to ensure that deaf, deaf-blind and hearing/vision impaired Tennesseans have access to telecommunications services as required by the Telecommunications Act of 1996 and T.C.A. § 65-5-207.

### **Equipment Needs**

Tennesseans in need of assistive communications devices are those who are deaf, deaf-blind and hearing/vision impaired. These impairments do not allow a person to communicate in near real time over distances, as by telephone, without using an assistive communications device. Assistive communications devices are items of equipment that operate in conjunction with a regular telephone or telephone line. This type of equipment provides the only alternative to hearing for the deaf or for those who may not be classified as deaf but whose hearing is so impaired that even the use of a hearing aid would not allow for an understandable telephone conversation. Assistive communications devices may also be of the type that would allow a person who is deaf, deaf/ blind or severely hearing/ vision impaired to have that same understandable telephone conversation as a hearing person on a daily basis.

Persons that are deaf or severely hearing/speech impaired must use an assistive communications device called a TTY in order to communicate over the telephone. The TTY is an instrument with a typewriter like keyboard and monitor screen. As one end

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<sup>23</sup> Telecommunications Act of 1996, Title 1, Subtitle A, Part II, Section 254, paragraph 2.b.(3).

user types their part of the conversation, the recipient is able to read the words and respond by typing their own part of the conversation. For a deaf or severely hearing impaired person to communicate with a hearing person who does not have a TTY, a relay center must be used.

For persons who are deaf and vision impaired, the required assistive communications device for telephone conversations is a TTY with the addition of a monitor with a larger screen and large sized character read out. These monitors can have the availability of several magnification levels, and they can be the type that magnifies only text or the type that will work in conjunction with a computer as well as a TTY. A telephone conversation would be held by typing as if only the TTY were being used.

The assistive communications device necessary for a deaf-blind person to have a telephone conversation is a TeleBraille (TB). A TeleBraille is a TTY like device that has a Braille keyboard and typed information is translated then displayed by refreshable Braille cells or dot display. Other than the type of reading that is necessary, a TeleBraille telephone conversation works the same way as a TTY conversation.

Although there are many more devices to assist with telephone communications, such as amplifiers, flashers and vibrators for ringers, large print keyboards and key pads, etc., the items of equipment identified above are the basic equipment necessary for understandable telephone communications for deaf, deaf-blind, or severely hearing/vision impaired Tennesseans.

### **Necessity and Availability/Cost**

Assistive communications equipment necessity is based on the size of the using population. As stated in the previous chapter, an accurate assessment of the number of U.S. citizens or Tennesseans needing assistive communication devices is difficult to obtain. Consequently, the best figures of this population is state and local estimates of deaf and hard-of-hearing populations. As stated in the preceding chapter, the Census Bureau estimates Tennessee's population which has a severe hearing impairment at 246,900.

By every study reviewed, Tennessee appears to have a large population that may require the use of assistive communication devices to use the telephone. In order to further explore this issue, the Tennessee Regulatory Authority conducted an informal survey among identified members of Tennessee's hearing impaired population. The survey instrument was mailed to 150 members of the known hearing impaired community on October 9, 1998. Due to the small number of responses, the results of this survey are not likely to be representative of Tennessee's hearing impaired population, but may be indicative. The use of survey results, therefore, may be anecdotal.

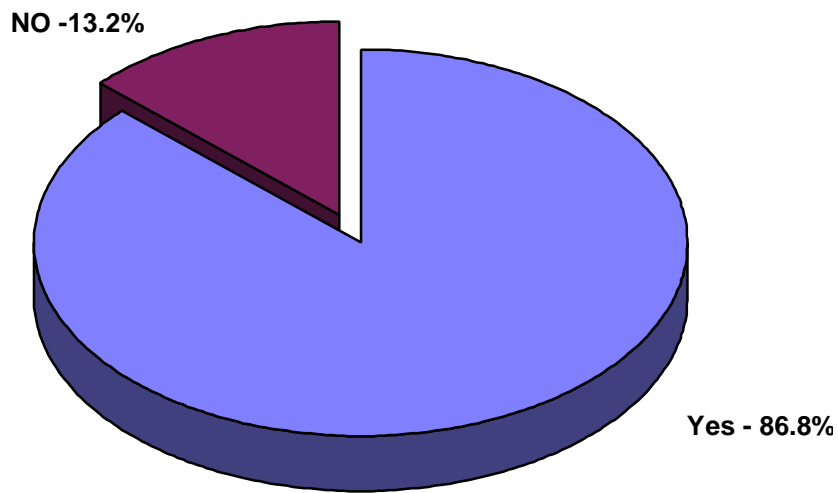
The survey questions are listed below:

1. (a). Do you currently have and use assistive communications (telephone) equipment?  
(b). If yes, how many do you have?  
(c). If no, why? (e.g., cost, availability, other).
2. What type of equipment do you use? (e.g., TTY, TTY with Reader, TeleBraille (TB), other.
3. What was the cost of your equipment (to the nearest \$25.00)



4. (a). Was financial assistance available to you to purchase your equipment?  
(b). If yes, what type? State, Local, Insurance, Other.
  5. How far did you have to travel to pick up your equipment? (25, 50, 75 miles, or >100 miles).
  6. (a). Can you get repairs and maintenance on your equipment?  
(b). If yes, where? (i.e., local, mail to mfg., other).
  7. If you need repairs or maintenance on your equipment can you get another instrument to use temporarily?
  8. How would you rate the difficulty you experienced obtaining your equipment?  
Extremely, Very, Moderate, Easy.
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1. (a). Do you currently have and use assistive communications (telephone) equipment? (b). If yes, How many do you have, (c) If no, why?

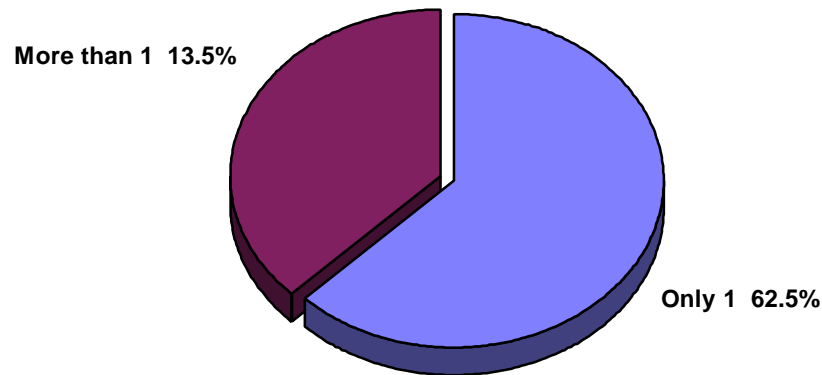
**Percentage of Respondents Having an Assistive Communications Device at Home**



Of the respondents to the survey 86.8 percent responded that they have and use assistive communications equipment in order to communicate over the telephone. The members of the hearing impaired population who responded to the survey and answered they did not have an assistive communications device was 13.1 percent. For those Tennesseans who responded they do not have an assistive communications device, the indication is they may not have the ability to use telephone communications from home. Although not representative, these survey figures indicate that there is a small portion of Tennessee's hearing impaired community that does not have access to assistive communications equipment.

When answering the second part of the survey question, "How many do you have?" it should be noted that unlike the hearing population where most homes have two or more telephones, only 37.5 percent of hearing impaired persons responded that they had more than one assistive communication device. A likely reason for this difference is the high cost of the TTY equipment, which is discussed later in this section.

### **Percent of Respondents with One or More than One Device**



While addressing the availability of assistive communications devices it must be repeated that these devices provide for understandable telephone communications for the hearing impaired community. In the hearing community, one can purchase an inexpensive telephone nearly anywhere and having more than one telephone in a home is common. This convenience is not the same for the disabled community. The Tennessee hearing impaired community must go through many more steps to obtain a telephone to meet their unique needs. These steps may include going through an audiologist, a major hospital, in some instances an insurance company, a church, community or family to obtain the appropriate resources to purchase a TTY.

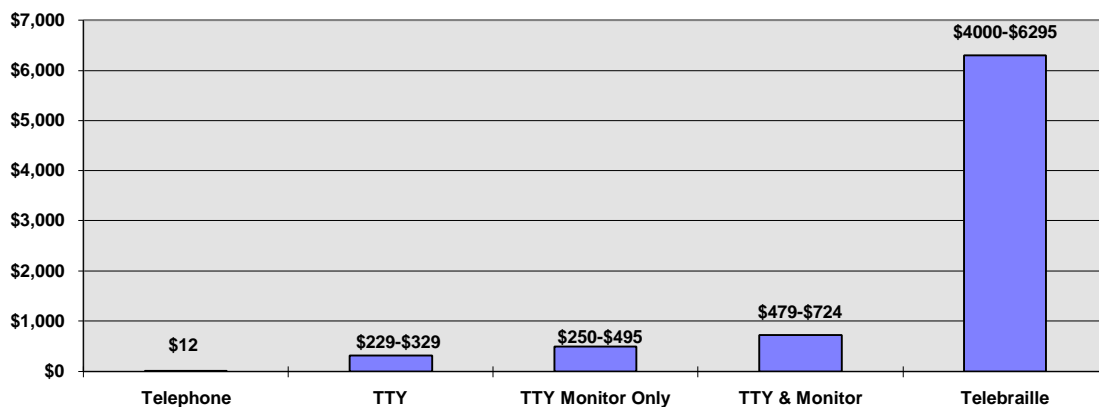
A check with major manufacturers, distribution affiliates and suppliers shows a trend in Tennessee, and else where, that assistive communications equipment distribution is predominantly by mail order. Of those distribution affiliates and suppliers that have operations in Tennessee, they tend to be located primarily in the Metropolitan areas of Memphis, Nashville, and Knoxville. It should be noted that none of the distribution affiliates, manufacturing or supplier companies contacted had any type of layaway or

payment plan available for the purchase of assistive communications devices. This fact increases the difficulty of obtaining TTY/TB equipment for citizens with low income. It was further determined that all repair and warranty work on the equipment is also predominantly by mail. Of the survey respondents only 6 percent indicate they are able to obtain repair and warranty work in their local area.

### 3. What was the cost of your equipment to the nearest \$25.00?

The respondents to the survey provided a cost range of \$250 to \$1000 for the TTY equipment they had to purchase. Some differences in the respondent's figures and the price ranges given below is attributed to the differences in the equipment. Just like telephones for hearing persons, assistive communications devices come with many optional features, and the more features in a unit the higher the cost. The price ranges given below are for the basic item of equipment with no extra features. Illustrated below is the price range of assistive communications devices.

**Price Ranges for Assistive Communications Devices**



The price range for the items of assistive communications equipment discussed in Part 1 of this section is taken from distributor and supplier catalogs and price lists. The price range of one TTY is \$229 to \$329 and if a large print reader (monitor) is needed then another \$250 to \$495 must be added to the TTY cost. The deaf-blind population has the greatest expense for assistive devices. Equipment to meet this portion of the population's needs has a price range between \$4,000 to \$6,295. Comparatively, the price range of a hearing persons' telephone instrument is usually less than \$40.

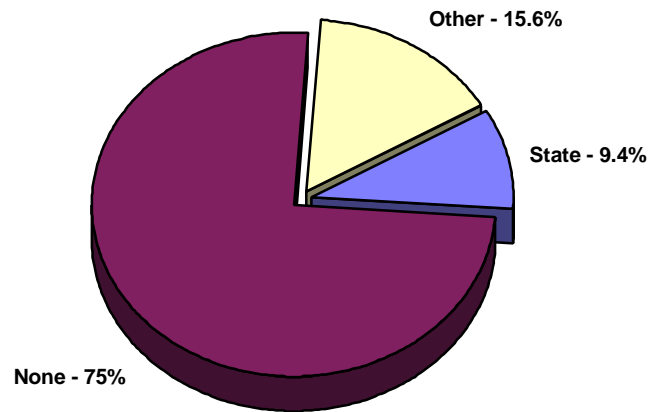
As seen in the chart above, there is no comparison in the cost of basic telephone equipment for hearing persons and the basic equipment necessary for hearing impaired, speech impaired and blind persons to have telephone service. Not only is the cost much higher, but servicing and purchasing TTY equipment is much more difficult than telephone equipment for the hearing population.

#### **4. Was financial assistance available to you to purchase your equipment?**

Tennessee is definitely a step ahead in ensuring the standard of Universal Telephone Service is applied to all of its citizens, including those who are hearing, speech or visually impaired. During 1987-1990 the need for TTYs for Tennessee's hearing impaired community was addressed by the Tennessee General Assembly with a funded assistive communications equipment distribution program. Discussion of this state program will be explored in the succeeding chapter. The same informal survey referenced earlier in this section contained a question concerning availability of financial assistance in

the purchasing of TTY equipment today. Only 9.4 percent of the respondents indicated that their assistive communication device was provided or funded by the state, and 15.6 percent indicated that they received a TTY as a gift, from their church, family or from their employer. An overwhelming 75 percent of respondents stated that no funding assistance was available when they purchased their TTY equipment.

### Equipment/ Funding Sources



### Current Status

As described in the previous chapter, the Tennessee Regulatory Authority has approved a new contract with AT&T to provide relay services in Tennessee. This new contract is important to Tennesseans because it ensures that state-of-the-art technology will be in place at the Tennessee Relay Center. One improvement is the addition of a “Turbo Code” feature. This feature enhances the speed of the communications through the relay center by making conversation nearer to real time. The present relay contract is in effect until September 2001.

Another positive direction Tennessee is taking regarding this issue is the fact that Tennessee is among the first states to install a TTY pay telephone for public use in a state park, with future plans to install this equipment in all state parks. Additionally, there is a plan to install TTY pay telephones in our state’s Welcome Centers and Interstate Rest

Areas. As of the date of this report, three (3) Welcome Centers have been equipped with TTY pay telephones.<sup>24</sup>

Although the above addresses a positive posture of Tennessee's inclusion of the hearing, speech and vision impaired population into the Universal Telephone Service standard, there are two (2) major concerns that need to be addressed concerning the availability of assistive communications devices.

The first concern relates to Part 2 of this Section which attempted to determine the number of Tennesseans that are hearing impaired. Determining the exact number of Tennesseans needing assistive communications devices continues to be elusive. Without knowing this number, it is difficult to gauge the actual need. The best method, however, appears to be estimates based upon the total population, as referred to by the Gallaudet study discussed in the previous chapter.

An important question is whether the percentage of Tennessee citizens in the hearing, speech and visually impaired community will increase? LSTHI estimates that Tennessee's population growth of the hearing impaired community alone will be 10 percent of the normal growth rate of the state. Another factor likely to fuel the increase in the portion of population requiring assistive communication devices is the overall aging of our society. We believe, therefore, that it is reasonable to expect that the hearing, speech and visually impaired population in our state will expand in the future. This finding indicates that the need for communication assistive devices is likely to be greater in the future.

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<sup>24</sup> This information was received from the Tennessee Department of Tourism on December 1, 1998.



The second concern is in the availability of assistive communication devices to those who require them. Factors such as cost, time, and even distance cause some Tennesseans difficulty in obtaining the appropriate device required by their individual needs.

Another concern deals with the servicing aspect of assistive devices. It is certainly noteworthy to point out that once on hand if an assistive communications device stops working there are few if any repair shops available locally. This requires the mailing of the device back to the manufacturer or a service center usually out of state. Since the majority of the hearing impaired community have only one assistive communications device, it is likely that they would suffer a lengthy interruption in their telephone service until the repaired device is returned to them. These obstacles are especially acute for Tennesseans living in rural areas of the state.

## **Conclusion**

Tennessee has continued to move forward to ensure that all its citizens have access to affordable, state-of-the-art telecommunications services. As this section has shown, however, citizens who are deaf, deaf-blind, or hearing, speech or visually impaired have a more difficult time using the telephone network. Their telephone equipment is available but can not be purchased at easily accessible stores. Instead this equipment must be mail ordered, and there is usually a moderate delay in receipt of mail ordered items. Further, the equipment needed for basic telephone service for the hearing impaired is ten (10) to twenty (20) times the cost for individuals without these disabilities and equipment for the

blind-deaf is over 100 times more expensive. If an assistive communications device stops working the mail must be used again as there are few if any repair shops available locally.

The current state policy is to ensure that all Tennesseans have affordable telecommunications services, which is one part of the Universal Service standard.<sup>25</sup> It is certain that the 1987-1990 Equipment Distribution Program and the Tennessee Relay Center are activities that help ensure that the deaf, deaf-blind and hearing, speech and visually impaired Tennesseans have access to the telephone network. Only by addressing this community's needs can universal service be achieved in Tennessee. Based on this analysis, assistive communications devices are available, mostly by mail order and with moderate to great difficulty. These devices are very costly and could be cost prohibitive for some of those affected Tennesseans. In fact, it is entirely possible that there are Tennesseans that need these devices but are unable to obtain them due to various reasons.

Thus far this study has addressed the need for assistive telecommunications equipment among the disabled, its availability and cost. All of these factors had a tremendous bearing on the inception of the short-lived TTY distribution program Tennessee initiated in 1987. Included in the following section of this report is an overview of Tennessee's previous TTY distribution program and the analysis of the survey, conducted by the TRA staff, of telecommunication equipment distribution programs that exists in other states.

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<sup>25</sup> T.C.A § 65-5-207

## **CHAPTER 3**

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### **An Analysis of Assistive Telecommunications Device Distribution Programs in the United States**

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#### **Introduction**

In 1987 pursuant to the Telecommunications Act for the Disabled the Tennessee General Assembly appropriated \$96,000 for the purchase and distribution of assistive communications equipment, also referred to as TTY equipment, for Tennessee's disabled community. The program was administered by the Tennessee Council for the Hearing Impaired (TCHI) under the jurisdiction of the Division of Rehabilitation Services in the Tennessee Department of Human Services. It specifically targeted persons who were hard-of-hearing, deaf, and speech-impaired. The type of equipment distributed was restricted to TTYs for Tennessee's hearing impaired and deaf population. Subsequently, the Council purchased and distributed a total of 350 TTY devices in the spring and fall of 1988.

In 1989, the Council received an additional appropriation of funds for the continuation of the equipment distribution program. Due to budgetary reductions, however, it was only granted half of the original amount, \$48,000. Nonetheless, the program continued.

In 1990, the program received another grant in the amount of \$48,000 from the General Assembly to maintain the program. During the year 1990, the program distributed 175 TTYs. Lacking funding after 1990, the program has since become defunct. Notably, from its inception in 1987 to its end in 1990 there were a total of 525 TTYs purchased and distributed to Tennessee's hearing and speech impaired citizens.

The provisioning of assistive communication devices for the hearing and visually disabled has now been limited to members of the private sector who initiate such programs. The BellSouth Telecommunication Center for the Disabled, a non-profit organization affiliated with BellSouth Telecommunications, Inc., provides assistive communication devices for individuals with disabilities. The equipment is provided on a rent or purchase basis, however, individuals are not given a reduced cost for the equipment. From September 1997 to September 1998, BellSouth distributed 6525 units in its nine (9) state region.<sup>26</sup>

As this brief overview has shown, the previous telecommunications equipment distribution program filled an important social need. But for its lack of funding, the program would still be functional. The prior sections of this study have shown the disparity between the need for the equipment and its cost. A disparity that may leave some disabled Tennesseans without adequate means of communication.

The following is a description of the general procedures of Tennessee's former TTY distribution venture.

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<sup>26</sup> BellSouth could not provide the actual number of TTYs it sold or rented exclusively in Tennessee.

### **Tennessee's TTY Distribution Program: 1987-1990**

As noted above, the Tennessee Council for the Hearing Impaired ("TCHI") was responsible for the operation of the state's previous telecommunications equipment distribution program.

Because of the limited number of devices available, during the initial phase of the distribution program, allocations of the number of TTYs to the distribution center was based upon general population statistics. As applications were received, it would be determined if adjustments were needed in the center's initial allotment. This allowed a certain amount of flexibility in meeting the needs of as many eligible applicants as possible.

#### ***Application Procedure***

Applications were accepted and equipment distributed on a quarterly basis. However, in the event of emergency situations and depending upon the availability of equipment, exceptions were made. Application deadlines were January 31, April 30, July 31 and October 31. Renewal applications followed the same schedule.

#### ***Purchasing of Equipment***

Equipment purchases for the program were under state contract. Under the approved state contract, TCHI was permitted to order the equipment as needed commensurate with available funds and avoid over or under purchasing the devices. When the number of devices needed were determined, an order was placed with the manufacturer for shipment. This procedure eliminated the need for equipment to be stored for long periods of time and the need for some method of securing the equipment.

State of Tennessee ID equipment tags were issued to the distribution center and attached to each device by the center's staff. In addition, each TTY had burned into its memory chip the letters "TCHI," thus identifying the equipment as property of the state.

### ***Maintenance and Repair***

Each device purchased had a minimum one year warranty. In addition, an extended warranty was purchased for each TTY. All maintenance and repair of the equipment was the responsibility of the manufacturer. If the equipment was in need of repair - requiring it to be returned to the factory - the recipient was responsible for its return, including the payment of postage and/or shipping charges. Returned equipment was sent to the distribution center to determine whether repairs could be made locally. The distribution center had a minimum stock of power supplies, and printers, should they need replacing. The distribution center also kept a stock of at least three "loaners" to be used when a recipient's machine was returned for repairs. The recipient was responsible for additional paper rolls for the TTY's printer.

### ***Monthly Telephone Charges***

It was made clear at the outset that the applicant would be responsible for the installation of basic telephone service, equipment, and all monthly charges by the telephone company. The distribution program only assisted with the cost of TTY equipment.

### ***Priority of Selection***

Because of the limited number of devices that were available, the TCHI accurately anticipated that there would be more eligible applicants than equipment supplies; therefore, the following priority schedule was used to determine eligibility.

Applications were dated and allocations made to those who applied first. In addition, a point system was created to rank the applications to assure that those who had the greatest need were served first.

### ***Certification of Disability***

Applicants were required to obtain some means of proof as to the presence of a speech or hearing impairment, thus necessitating the need for a TTY. The certification was acceptable in the form of the signature of a physician, audiologist, speech pathologist, community service center for the deaf staff member, representative of a state health or rehabilitation agency, Social Security representative, Tennessee School for the Deaf representative, or other appropriate state or federal agency representative. Copies of an audiogram or other documentation were also acceptable.

### ***Verification of Information***

Upon completion of the application, the applicant certified that the information presented was true and accurate, and he/she understood that proof of this may be required as needed to determine his or her eligibility. Financial information was verified through income tax returns, payroll stubs, etc.

### ***Confidentiality***

The applicant was informed that all information obtained would be kept confidential and would be used for the purposes of the TTY distribution program only as required for assistance, reports and audits.

Services under the program were provided on a nondiscriminatory basis without regard to handicap, race, color, sex, age, creed, or national origin in compliance with Title VI of the Civil Rights Act of 1964, as amended, Title IX of the Education Amendments of 1972, and Title V of the Vocational Rehabilitation Act of 1973 and its amendments.

All applicants for services possessed the right to file complaints and to appeal according to the regulations governing the principle.

### ***General Eligibility Requirements***

All applicants were required to satisfy the following minimum requirements to be considered for the program:

- (1) Resident of the State of Tennessee
- (2) Have significant hearing or speech impairment such that he/she cannot use the telephone effectively without the use of a TTY.
- (3) There was no minimum age for applicants. However, an applicant should have been old enough and mature enough to actually use the TTY for the purposes of receiving or sending messages via the telephone system

### ***Specific Eligibility Criteria***

**Income** - Due to the limited allocation of funds, the supply of TTYs were likewise limited. Accordingly, the General Assembly required a financial means test to be applied to those who wished to participate in the program. Therefore, the following financial means test or requirements were used to assure that people who could not afford to purchase a TTY could receive one through the program. Applicants who received public assistance including Aid to Families with Dependent Children (AFDC), Medicaid, food stamps, general assistance, or who's income fell below the "Federal Income Poverty Guidelines," adjusted annually, automatically met the program's economic needs



requirements. A sliding scale was used to rank those whose income was above the Federal Poverty Level.

Special hardship cases where income was limited and above 120 percent of Federal Poverty Income Guidelines due to recurring high medical expenses, etc. were possibly eligible for consideration.

### ***Special Considerations***

During the distribution period, other factors were considered to assure applicants whose needs were the greatest were met. Consequently, consideration was made for the following:

- (1) The presence of any serious physical, medical, and/or mental condition that presented a life threatening situation requiring emergency assistance availability through the use of a TTY. An example would be a heart condition, stroke, paralysis, epilepsy, severe depression, etc.
- (2) An eligible applicant living alone.
- (3) A living situation where there was one or more deaf or speech impaired adults or with one or more deaf children over the age of eleven.
- (4) Applicant was a deaf child under the age of 18 years and able to use a TTY for, at least, emergency purposes and who was often left in charge of the household or alone.
- (5) Applicants who had special employment related needs for the TTY device.
- (6) Any other unique circumstance deserving of consideration which did not fit into a specific category listed above.

### ***Other Eligibility Considerations***

The following considerations were used in the TTY program to include or exclude applicants in determining eligibility. The considerations were outside the realm of pre-established criteria for eligibility:

- (1) It was anticipated that as funds became available, deaf-blind applicants could apply for a TeleBraille device. These applicants would be screened to determine if they were eligible for any other form of assistance before the TTY distribution funds were used. However, the program terminated before it was able to provide services specific to deaf-blind applicants.
- (2) Applicant who met the minimum requirements but whose annual income was higher than the 120 percent of the Federal Poverty Income Guidelines. An increasing income schedule was used to prioritize these applicants to assure that those most in need were served first.
- (3) The state TTY distribution program provided only one TTY per household. Individuals who currently owned a TTY device were not eligible to receive an additional device unless their TTY was broken and could not be repaired.
- (4) All applicants were required to submit an application form to TCHI along with verification of their disability. Applicants could be asked to provide verification or proof of their income.
- (5) All applicants were required to sign an agreement detailing the conditions of acceptance for the equipment.

### ***Security***

All equipment under the TTY program remained the property of the Tennessee Council for the Hearing Impaired. As a stipulation of participation each recipient was required to sign a form indicating that he or she understood and accepted the following:

- (1) Equipment obtained through the program may not be sold, loaned, or otherwise transferred out of the possession of the original recipient. Unauthorized transfers would subject the recipient to repossession of the equipment, prosecution and/or liability for the full purchase price of the equipment.
- (2) If the recipient moved to a different address within the State of Tennessee, the Council was to be notified immediately of the change of address. If the recipient moved out of Tennessee, or died, the equipment was to be returned to the

Council. If the recipient no longer had telephone service for any reason, he/she was to notify the Council immediately.

- (3) Recipients were liable to reimburse the Council for damage done to the equipment as the result of negligence, recklessness, or intentional destruction.
- (4) Recipient was to notify the Council immediately if the equipment was lost, stolen, or damaged, and if stolen, local police must have been notified and a copy of the police report forwarded to the Council within five days of the date the theft was reported.
- (5) In the event of a separation or divorce in a family receiving equipment under the program, the equipment must be returned to the Council for redetermination of the individual status of each partner before reassigning possession of the equipment.
- (6) When the equipment was provided as the result of hardship status, a recipient had to inform the Council of any material change in the condition that resulted in hardship determination.
- (7) Equipment was to be provided for a twelve month period, renewable thereafter for twelve month periods upon expedited re-application and compliance with the applicable conditions.
- (8) Notwithstanding the twelve month contract period, the Council could repossess the equipment prior to twelve months if: there was a material change in circumstances; repeated negligent or willful damage to the equipment; or other breach of the responsibility on the part of the recipient. An appeal to the Executive Director of the Council was permitted if the recipient believed the provision had been wrongfully applied.

All equipment was marked with non-removable identification by the distribution center and all serial numbers recorded. Anyone who attempted to sell or knowingly purchase stolen TTY equipment was prosecuted to the fullest extent of the law.

Though the previous program was restricted to the provision of TTY equipment, it was successful until its termination in 1990. As it will be shown in the following subsection, many of the procedures utilized in the previous Tennessee program are

currently being used by other states in their telecommunications equipment distribution programs.

## **SURVEY OF EQUIPMENT DISTRIBUTION PROGRAMS IN OTHER STATES**

In an attempt to gather information about the telecommunications assistive equipment distribution programs of other states, a survey was sent to forty-nine (49) states and the District of Columbia inquiring about such programs for the disabled that may exist. The surveys were sent on July 20, 1998 with a deadline response date of August 20, 1998. A follow-up reminder was sent to those states who had not responded on August 21, 1998 with a deadline response date of September 10, 1998.

The questions on the survey were as follows:

1. Does your state currently have or planning to implement a program for the distribution of telecommunications equipment to the deaf, hard of hearing, blind and deaf-low vision communities?
2. If you answered yes to question 1, what agency is responsible for the oversight of the program?
3. How long has your distribution program been in effect?
4. Is the program a legislative mandate or a program initiative?
5. How is the program administered (i.e. staff positions/functions)?
6. Does the program purchase extended warranties on equipment or contract for equipment maintenance? Under what circumstances are machines replaced?
7. How many hard of hearing, deaf, deaf-blind and deaf-low vision does the program serve, respectively? (If available)
8. What type of equipment is provided for the hard of hearing, the deaf, the deaf-blind and deaf-low vision participants, respectively? (i.e. name & model number)
9. How is the number of telecommunications devices that will be needed for the hard of hearing, the deaf, the deaf-blind and deaf-low vision participants determined, respectively?
10. How are technological changes in equipment handled? For example, does your program provide for upgrading existing equipment?
11. How is the program funded? Please breakdown, if possible, the equipment costs and the administrative costs.
12. How much does the program cost per year to operate?
13. How do you advertise the program?

14. Are there criteria used to determine a person's economic "need" for the equipment? If yes, how is "need" determined?
15. Has your state done an evaluation of the distribution program? If so, please indicate the results.

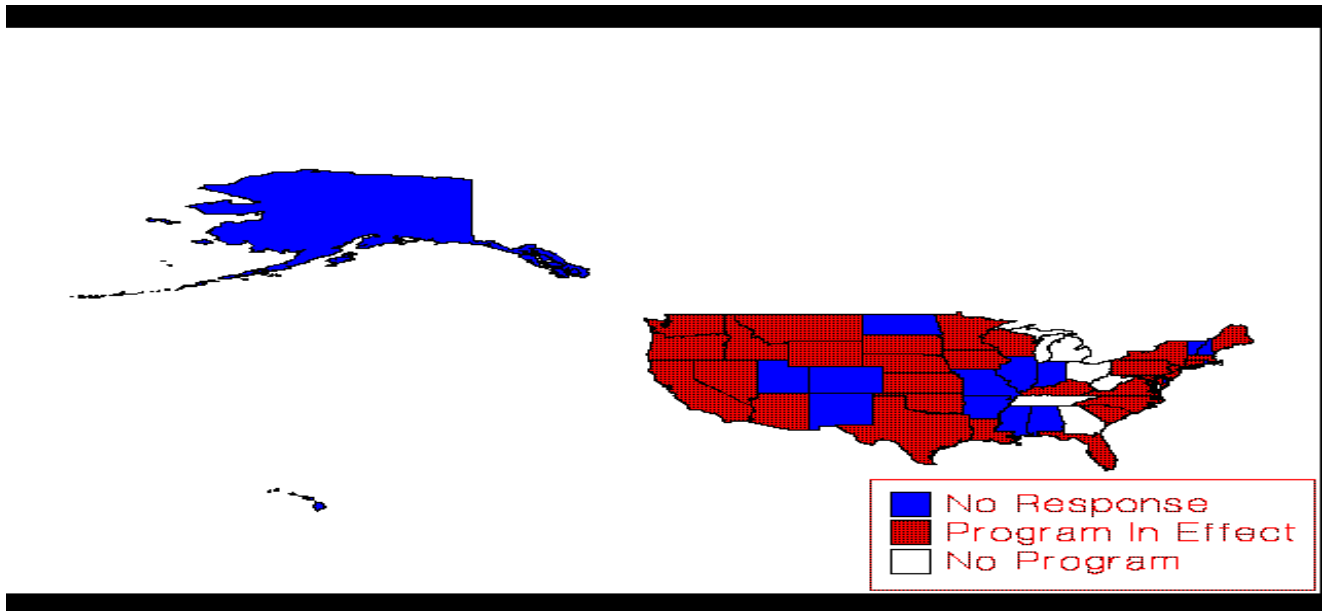
The remaining pages of this section will describe the results of the survey. The results of each question will be described along with some analysis.

### **States Who Responded to the Survey**

Arizona	Nevada
California	New Jersey
Colorado	New York
Connecticut	North Carolina
Florida	Ohio
Georgia	Oklahoma
Idaho	Oregon
Iowa	Pennsylvania
Kansas	South Carolina
Kentucky	South Dakota
Louisiana	Texas
Maine	Virginia
Maryland	Washington
Massachusetts	West Virginia
Michigan	Wisconsin
Minnesota	Wyoming
Montana	
Nebraska	

- 1. Does your state currently have or planning to implement a program for the distribution of telecommunications equipment to the deaf, hard of hearing, blind and deaf-low vision communities?**

Of the thirty-four (34) states responding to the survey, twenty-nine (29) have existing programs for the distribution of assistive telecommunications equipment. Five (5) states responded that they currently have no program nor are there immediate plans to initiate a program. The illustration below depicts those states with and without equipment distribution programs.



Michigan responded that it does not currently have a program for the distribution of assistive telecommunication equipment to the disabled. However, there is legislative authority for those in need to purchase equipment at cost through the local telephone company. The legislation for the reduced-cost purchases has been in effect for eighteen years. Other states that do not have distribution programs are Georgia, Colorado, Ohio and West Virginia.

The state of New York has two programs that are charged with providing telecommunications devices to the disabled. One, the Lifeline Equipment Distribution program, distributes free assistive telephone devices to income eligible individuals with disabilities. Another program allows individuals with disabilities to purchase or lease assistive equipment at reduced costs with favorable terms.

**2. If you answered yes to question 1, what agency is responsible for the oversight of the program?**

Public Service Commissions, Utility Boards and Public Utility Commissions provide oversight for many programs in other states. A total of seven such programs are under the jurisdiction of the state utility commissions. Additionally, state agencies for the Deaf and Hard of Hearing, and State Departments of Health and Human Services were reported to provide oversight to many programs. Connecticut's equipment distribution program exists as a part of its contract for relay service and is overseen by The Connecticut Commission on the Deaf and Hard of Hearing.

Massachusetts has a unique oversight arrangement. Trustee duties are shared among the Massachusetts Department of Telecommunications and Energy, the Massachusetts Commission for the Blind, the Massachusetts Commission for the Deaf and Hard of Hearing and the Massachusetts Rehabilitation Commission. These agencies collaborate on the direction and administration of the program.

**3. How long has your distribution program been in effect?**

There were a variation of inception dates reported in response to this question. They range from as recent as October 1998 to as early as 1982.

Idaho is implementing a small pilot program for telecommunications equipment distribution in October 1998. As a part of the pilot, Idaho will gather information on the need for a program and may pursue a larger state funded program. The program is expected to serve fifty (50) to seventy (70) individuals.

New York's dual program effort has been in effect for two and eleven years, respectively.

**4. Is the program a legislative mandate or a program initiative?**

All except four (4) states responding that programs are in effect have enacted equipment distribution programs by legislative mandate. Programs in Idaho and New Jersey are program initiatives. As stated earlier, Connecticut's equipment distribution program is a component of the state's relay service contract. New York's Lifeline Equipment Distribution program was established pursuant to an incentive rate agreement between the New York Public Service Commission and Bell Atlantic. The purchase/lease program was a directive from the New York Public Service Commission.

**5. How is the program administered (i.e. staff positions/functions)?**

Most states reported small staffs of two (2) to four (4) employees in administering the equipment distribution programs. The small staff are a reaction to limited funding, and a proactive measure to minimize administrative costs.

Florida, whose program has been established for seven years, reports the largest staff of the states responding to the survey. The program has nine (9) full-time staff members. New York has the second largest staff with three (3) to four (4) service representatives and four (4) to five (5) managers. Each of these programs is administered by the state Public Service Commission.

Idaho has contracted with Easter Seals to administer its pilot program, and reports no staff size. Likewise, Connecticut's program is administered through its relay service provider, Sprint, and reports no staff specifically designed for the distribution program.



**6. Does the program purchase extended warranties on equipment or contract for equipment maintenance? Under what circumstances are machines replaced?**

In response to question 6, most states reported that they do not purchase extended warranties for the equipment they distribute. Upon purchasing the equipment, a one year warranty is usually included. Nonetheless, these states also assert that in the event equipment is found to be defective, the devices may be repaired or replaced. Iowa, Kansas, Nebraska and Texas indicate that once the individual has exchanged his or her voucher for the equipment, maintenance and repair of the equipment are the owner's responsibility.

All states with programs reported that equipment that was broken due to abuse or mistreatment would not be replaced. Seven (7) states acknowledged that equipment maintenance and repairs are covered by warranties on the devices.

Maryland reports that the warranties it purchases vary by type of equipment. That is, if the equipment is valued at less than \$50, no additional warranty is purchased.

Massachusetts reports that its extended warranty decisions are made through Request for Proposal during the search for suppliers. Depending on the product history and additional industry information, extended warranties may or may not be purchased.

**7. How many hard of hearing, deaf, deaf-blind and deaf-low vision does the program serve, respectively? (If available)**

Most states responded to question 7 with a total rather than individual figures for each disability category. With the exception of Florida, Montana and Massachusetts, states approximate their client bases to be below 10,000. Nonetheless, states acknowledge that a larger disabled population exists than the programs serve. For

example, Florida asserts 1.2 million people in the state are eligible to participate in its program yet its database only contains, 165,000 individuals. Likewise, the state of Texas reports that approximately 1.6 million individuals in the state are eligible to participate in its program. The Texas program has issued 1,600 vouchers in its short four month existence. The Massachusetts distribution program has served approximately 50,000 individuals, and the Montana program reports to have served approximately 15,000.

Deaf and hard-of-hearing individuals comprise the majority of each state programs client base.

**8. What type of equipment is provided for the hard of hearing, the deaf, the deaf-blind and deaf-low vision participants, respectively? (i.e. name & model number)**

Various types of assistive equipment were reported to be distributed, in a variety of combinations. Some of the more popular types of equipment reported to be distributed were:

Ultratec Super Print 4425	Uniphone 1140	Voice Carry-Over Telephone
Ultratec Superprint 425	Ameriphone SR-200	Combination TTY/Telephone
Amplified Phone	Handset Amplifier	Ring Signaler
Tele-Braille II & III		

**9. How is the number of telecommunications devices that will be needed for the hard of hearing, the deaf, the deaf-blind and deaf-low vision participants determined, respectively?**

The majority responding to the survey reported that they consult the distribution figures of the previous year to determine the number of telecommunication devices that will be needed for the upcoming year. While states, such as Texas, Nebraska, Iowa, Kansas, and Wisconsin, whose distribution programs are based on voucher systems do not keep an inventory of equipment.

**10. How are technological changes in equipment handled? For example, does your program provide for upgrading existing equipment.**

Most states reported that the equipment they offer is not generally upgraded at the request of a program participant. They did report, however, that upgrades are provided as needed. For example, if a particular model of equipment no longer accurately meets the needs of the recipient, or if the equipment manufacturer advises that recipients may be better served by the use of a more technologically advanced model of the equipment.

Additionally, most states allow recipients to upgrade their devices upon the expiration of their possession period. Of course, the upgraded device must be one that is offered by the program. In the event an upgrade is desired by a program participant and the device is not offered by the program, the participant may incur all or a part of the cost of the equipment.

**11. How is the program funded? Please breakdown, if possible, the equipment costs and the administrative costs.**

Funding methods varied among the states who responded. An overwhelming majority of the states identified a surcharge on telephone bills as their primary method of funding. The excise tax, Universal Service fund and Relay Service fund were also mentioned as funding sources. Finally, one-time grants, annual legislative appropriations, Directory Assistance and private benefactors were other funding methods reported.

The Oklahoma equipment distribution program is one of many that receives its funding through the imposition of a surcharge. The Oklahoma program receives the sum of a monthly \$.05 surcharge for each telephone line in the state. The surcharge is paid by telephone customers and assessed on the telephone bill. Florida which has the largest

funded program also receives its funding from a monthly surcharge on telephone lines in the state.

**12. How much does the program cost per year to operate?**

Operating costs for programs varied. The costs range from a low of \$11,500, for the pilot program in Idaho, to a high of \$14 million in Florida. The average operating cost among states who provided the information was approximately \$1,390,030.00. The chart below lists each state, who responded to question 12, and its operating costs for the telecommunications equipment distribution program. Included in the operating costs are equipment costs as well as administrative costs.

<b>STATE</b>	<b>TOTAL OPERATING COSTS</b>
<b>Florida</b>	<b>\$13 - \$14 million</b>
<b>Idaho</b>	<b>\$11,500</b>
<b>Iowa</b>	<b>\$216,418</b>
<b>Kansas</b>	<b>\$1,103,432</b>
<b>Kentucky</b>	<b>\$200,000</b>
<b>Louisiana</b>	<b>\$1,306,102</b>
<b>Maryland</b>	<b>\$300,000</b>
<b>Massachusetts</b>	<b>\$3,000,000</b>
<b>Minnesota</b>	<b>\$1,200,000</b>
<b>Montana</b>	<b>\$700,000</b>
<b>Nebraska</b>	<b>\$1,001,537.85</b>
<b>Nevada</b>	<b>\$160,000</b>
<b>New Jersey</b>	<b>\$50,000</b>
<b>New York</b>	<b>\$3,870,000</b>
<b>North Carolina</b>	<b>\$200,000</b>
<b>Oklahoma</b>	<b>\$500,000</b>
<b>Oregon</b>	<b>\$240,000</b>
<b>Pennsylvania</b>	<b>\$41,110</b>
<b>South Carolina</b>	<b>\$300,000</b>
<b>South Dakota</b>	<b>\$160,000</b>
<b>Texas</b>	<b>\$4,300,000</b>
<b>Virginia</b>	<b>\$225,000</b>
<b>Washington</b>	<b>\$1,304,932</b>
<b>Wisconsin</b>	<b>\$80,000</b>
<b>Wyoming</b>	<b>\$280,735.42</b>

**13. How do you advertise the program?**

There were many methods of advertising the programs reported. Among the various methods reported were:

Web pages	Pharmacies
Newspapers	Dr. Offices
Radio	Churches
Television	Telephone Directories
Visits to Schools	Newsletters
Mass Mailings to Targeted Audience	

**14. Are there criteria used to determine a person's economic "need" for the equipment? If yes, how is "need" determined?**

Many states reported that their programs were equal access, and have no financial criteria for participation. Other states use Federal Poverty Guidelines or the state's median income to determine eligibility. According to the survey responses, there were as many states who consider an applicants economic situation for program participation as those who do not.

**15. Has your state done an evaluation of the distribution program? If so, please indicate the results.**

Of the states who responded to question 15, thirteen (13) reported that no evaluation had been conducted. Fourteen (14) states responded that they had conducted an evaluation of the equipment distribution program with favorable results. Many states who have conducted evaluations have used customer satisfaction surveys to gauge program performance. Some, however, are required to provide annual or quarterly reports to the program's governing body.

Nebraska's evaluation of its state assistive equipment distribution program presented evidence that the economic guidelines for participation needed to be removed or changed to include individuals whose household incomes fall between and include \$10,000 to \$30,000. With the guidelines for participation including only those whose household incomes were less than \$10,000, not enough needy individuals in Nebraska were qualifying to participate in the program. Therefore, the funds provided for the program were not being exhausted. The guidelines have since been altered.

## **Conclusion**

This section has provided an overview of Tennessee's former TTY program. In addition, information from assistive equipment distribution programs in other states has been reviewed. As the results indicate most state legislatures have taken a proactive role in providing assistive telecommunications equipment to citizens with disabilities. Clearly by initiating such distribution programs, lawmakers acknowledge the disparity between the need for the equipment and its cost. Most states also require some form of means testing in order to receive TTY equipment. By this method, only those with the greatest need are able to qualify for the equipment. One interesting approach Texas is using to meet the need for TTY equipment is by the use of vouchers. Qualified individuals use the vouchers to purchase the necessary equipment from private vendors that have registered with the program.

Though there is still a great need for assistive telecommunications equipment in the disabled community, there has certainly been a concerted effort, nationwide, to at least provide some relief to those who are unable to purchase the equipment.

## ***CHAPTER 4***

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### **Policy Options and Opportunities**

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#### **Introduction**

The previous chapters have estimated the disabled Tennessee population that likely needs some type of assistive communication device in order to use the telephone network. The best count of this population in Tennessee is based upon an estimate. This estimate, however, indicates that approximately 9 percent of Tennessee's population may have some form of impairment of their speech, vision or hearing which may require the need for some type of assistive communication device.

Tennessee has moved in a positive direction in many areas in meeting the needs of the disabled community with respect to telephone service. A modern relay center, low telephone rates and the existence of a discounted monthly telephone rate plan provides opportunities to use the telephone network to not only the visual, speech and hearing impaired community but also to any economically disadvantaged Tennessean. One area, however, that Tennessee is not meeting at the present time is a program designed to assist citizens with the purchase of assistive communication devices. Tennessee offered such a program from 1987 to 1990. During this period of time, the state distributed 525 TTYs to hearing and speech impaired citizens. A total of \$192,000 was appropriated by the General Assembly during the course of the program.

Based upon our research, which included the use of several surveys, the cost of assistive communication devices is from 10 to over 100 times higher than traditional telephones. Not only is the cost high, but the instruments are often difficult to obtain and

have serviced. Our research also discovered that the majority of individuals needing assistive communication devices typically have only one unit in their home. This causes problems if their unit has to be sent off for repair. It is likely that in these situations the person is without the use of a telephone for weeks at a time.

Finally, we found that the majority of states (29) offer some form of assistance to their disabled population in regards to obtaining assistive communication devices. All but four (4) of these states offer their distribution program via legislative mandate. The administrative cost of the programs appear to be low with most states reporting small staffs of two (2) to four (4) employees. The approaches used by states to provide assistance is diverse with the methods ranging from vouchers to distribution based upon need with the allotment given on a first come first served basis.

The funding methods of the programs are also different. The majority of states funded the program by use of a surcharge on telephone bills. Other states use annual legislative appropriations and private grants to fund their programs. Tennessee's previous distribution program utilized the annual legislative appropriation method.

## **Policy Options**

Listed below are some policy options that the General Assembly may want to consider if it decides that some form of assistance should be provided by the state to those citizens with speech, hearing or visual impairments.

- Reinstitute the previous Tennessee distribution program with the additional distribution of TB equipment for the blind.



- Provide vouchers to qualified Tennesseans that can be redeemed only by the purchase of an assistive communication device.
- Utilize the state's buying power by issuing a Request For Proposal ("RFP") among manufacturers of assistive communication devices. The price paid by the state for these devices should be below what a citizen could purchase the equipment. Vouchers provided by the state to qualified citizens could be used to purchase the assistive communication device.
- Initiate a loan program through private financial institutions where the disabled could borrow the money for assistive communications devices. The loan program could be backed by the state in order to obtain low interest rates for citizens.

These options are not exhaustive, but they do provide some models that a state assistance program could take. After the policy question of whether the state will reinstitute its distribution program is answered by the General Assembly, the implementation questions of how much to fund and how to fund the program has to be answered. The average state allotment for states that have implemented an assistance program is \$1,390,000. The majority of states, however, have funded their programs with less than \$500,000 annually. States that have assistance programs consistently voice that the need far exceeds the supply of assistive communication devices. This finding demonstrates not only the need for the equipment but also highlights the difficulty in quantifying the magnitude of the need. For this reason, many states list qualifying criteria in order to ensure that the most needy receive assistance.

## **Conclusion**

Telephone service is a necessity not a luxury today, especially for those citizens with speech, hearing or visual impairments. As graphically described in the beginning of Chapter 1 of this Report, the use of telephone service for Tennessee's disabled population can often make the difference between life and death. Tennessee has taken some important steps to ensure that all its citizens can participate in the Information Age. Future policies will need to be proactive and creative in meeting the future telecommunication needs of all Tennesseans. The goal of Universal Telephone Service can only be achieved by addressing the unique needs of all citizens.